BISS Biodiversity Information Science and Standards

Biodiversity Information Science and Standards 9: e178671
doi: 10.3897/biss.9.178671

OPEN ACCESS

Conference Abstract

Five Years of the Guatemala Biodiversity Portal: Increasing Capacities for the Mobilization of Natural History Collections Using Symbiota

K. Samanta Orellana[‡], Zabdi M. López[§], Maura L. Quezada[|], Jiichiro Yoshimoto[¶], Lucia M. Prado[#], Ana Luisa Ambrocio[#], Nico Franz[‡], Edward Gilbert[‡]

‡ University of Kansas, Lawrence, United States of America
§ Bern University, Bern, Switzerland
| Centro de Estudios Conservacionistas, Universidad de San Carlos de Guatemala, Guatemala, Guatemala
¶ Universidad del Valle de Guatemala, Guatemala, Guatemala
# Museo de Historia Natural, Universidad de San Carlos de Guatemala, Guatemala, Guatemala

Corresponding author: K. Samanta Orellana (ksorellana@ku.edu)

Received: 19 Nov 2025 | Published: 20 Nov 2025

Citation: Orellana KS, López ZM, Quezada ML, Yoshimoto J, Prado LM, Ambrocio A, Franz N, Gilbert E (2025) Five Years of the Guatemala Biodiversity Portal: Increasing Capacities for the Mobilization of Natural History Collections Using Symbiota. Biodiversity Information Science and Standards 9: e178671.
https://doi.org/10.3897/biss.9.178671

Abstract

Symbiota is an open source software for the management and mobilization of biodiversity information (Gries et al. 2014). Symbiota generated portals work as online Collection Management Systems (CMS) and medium-scale aggregators, facilitating digitization and mobilization taks simultaneously. CMS features for live-managed collections include a form to directly transcribe specimen data and upload images, as well as more advanced label editing, loan management, and georeferencing tools. Aggregator features allow administrators to integrate snapshot collections that are not directly managed in the portals. Currently, more than 60 portals are maintained by the Symbiota Support Hub, now based at the University of Kansas. Each portal is managed by a community of biodiversity researchers, often focused on specific taxa or regions. The Guatemala Biodiversity Portal (GBP) is a Symbiota-based platform, dedicated to digitization and mobilization of natural history collections in the country (Orellana et al. 2024), serving academic, non-governmental and governmental institutions. In five years of activity

© Orellana K et al. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

(September 2020 to September 2025), the GBP enabled the digitization and mobilization of more than 58,000 records of Guatemalan collections and biodiversity surveys (Fig. 1). Additionally, the GBP integrates specimen and observation records shared by foreign collections and iNaturalist, with taxonomic resources available in IUCN, Catalog of Life, World Register of Marine Species, and the Biodiversity Heritage Library, among others, increasing accessibility of specialized information for local communities.

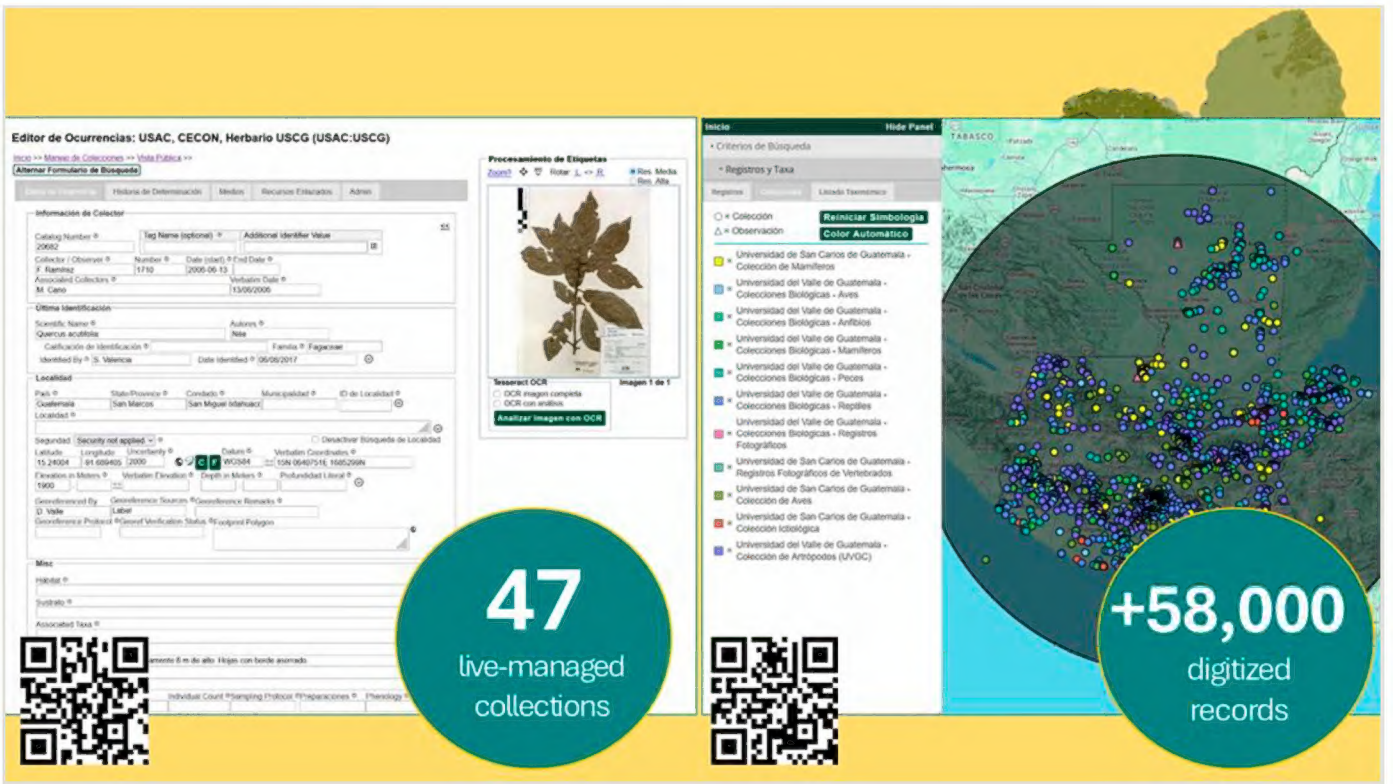

Figure 1.

Example of a data form in the Symbiota Guatemala Biodiversity Portal, and a map illustrating a subset of georeferenced records (CC-BY-NC-4.0).

At least 86% of these records (more than 50,000) have also been mobilized to the Global Biodiversity Information Facility (GBIF) to increase their accessibility (GBIF 2025,Fig. 2). From GBIF, data can be cited in scientific publications and harvested by external platforms like Bionomia (Shorthouse 2020), aiding local researchers to claim credit for their collected and identified specimens. Moreover, the direct data mobilization to GBIF, has facilitated the aggregation of 30 collections and over 50,000 records to this global platform. The digital presence of Guatemalan collections has allowed the use of the data in at least 500 scientific publications, including studies developed by local scientists. Furthermore, Guatemalan collections and their digitized records are now available in the Global Registry of Scientific Collections (GRSciColl), increasing their international visibility.

The GBP has also facilitated development of Symbiota documentation in Spanish, as well as online and in-person training in Guatemala. Regular workshops, meetings, and social media communications keep the community engaged and updated about the GBP. Online activities have also reached hundreds of users in natural history collections across Latin America, increasing capacity for the mobilization of biodiversity data in the

region. The poster in Spanish presented during the conference is available as Supplementary Material (Suppl. material 1).

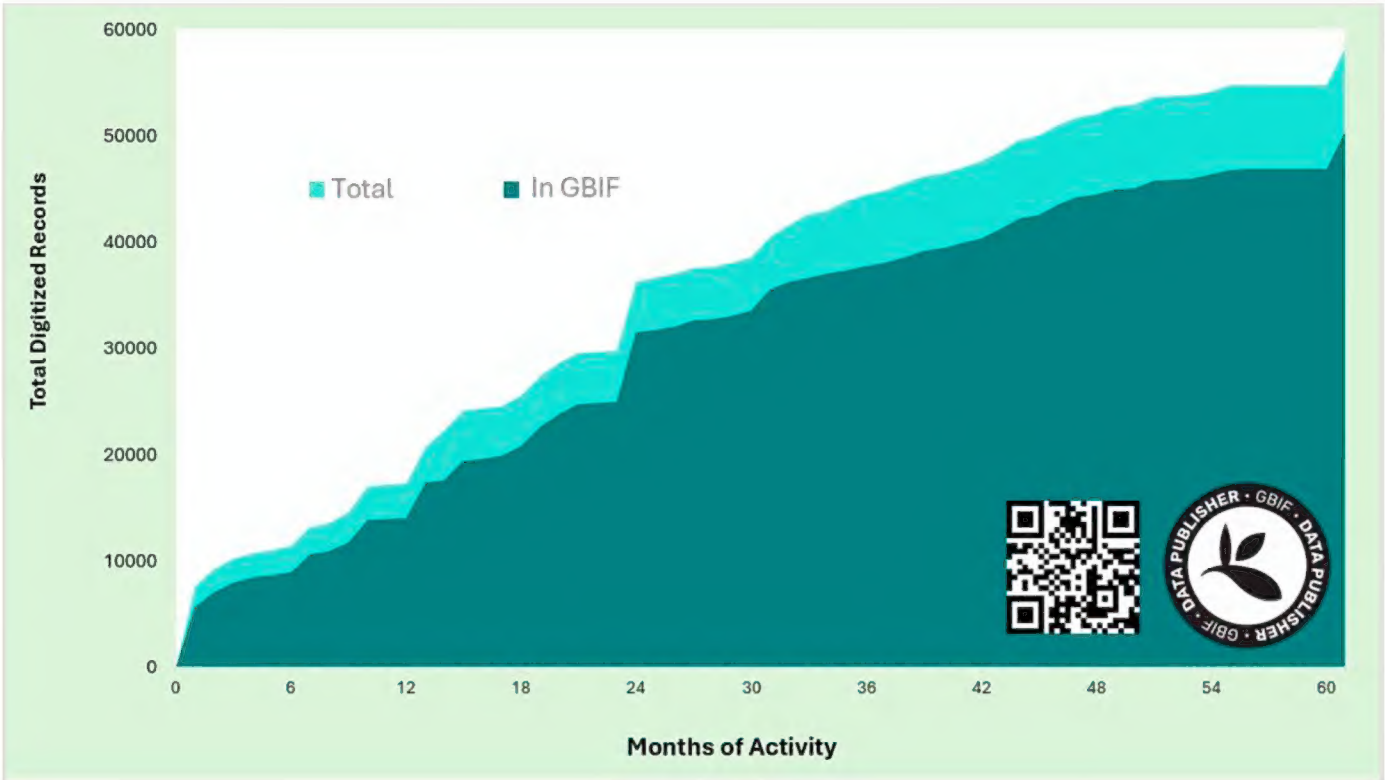

Figure 2.

Digitized specimens in the Guatemala Biodiversity Portal and percentage mobilized to GBIF (GBIF 2025) in 60 months (five years) of activity (CC-BY-NC-4.0).

Keywords

digitization, specimen data, collection management system, community of practice

Presenting author

K. Samanta Orellana

Conflicts of interest

The authors have declared that no competing interests exist.

References

- GBIF (2025) GBIF Occurrence Download. https://doi.org/10.15468/dl.98k4hw
- Gries C, Gilbert E, Franz N (2014) Symbiota – A virtual platform for creating voucher-based biodiversity information communities. Biodiversity Data Journal 2 https://doi.org/10.3897/bdj.2.e1114

- Orellana KS, López Z, Yoshimoto J, Quezada M, Prado L, Ambrocio A, Barrios-Izás M, Jiménez RA, García P, Post G, Franz N, Gilbert E (2024) Advances in the Digitization and Mobilization of Natural History Collections in Guatemala. Biodiversity Information Science and Standards 8 https://doi.org/10.3897/biss.8.134288
- Shorthouse D (2020) Slinging With Four Giants on a Quest to Credit Natural Historians for our Museums and Collections. Biodiversity Information Science and Standards 4 https://doi.org/10.3897/biss.4.59167

Supplementary material

Suppl. material 1: Cinco Años del Portal de Biodiversidad de Guatemala: Incrementando Capacidades de Movilización de Colecciones de Historia Natural con Symbiota doi

Authors: K. Samanta Orellana, Zabdi López, Maura Quezada, Jiichiro Yoshimoto, Lucía Prado, Ana Luisa Ambrocio, Nico Franz, Edward Gilbert
Data type: Image, pdf file
Brief description: Original poster in Spanish presented during Living Data in Bogota, Colombia (2025).
Download file (2.26 MB)